



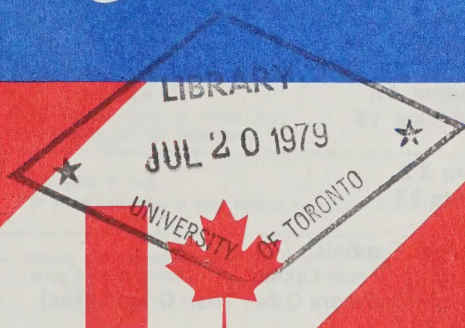
3 1761 11650467 1

Government  
Publications

D

71  
72  
2001

# boating safety guide



Transport  
Canada

Transports  
Canada

Coast Guard

Garde côtière

# *boating safety guide*

## **Standard Marine Distress Signals 1**

## **Search and Rescue 2**

What You Can Do

Caution

## **Weather Information 4**

Broadcasts

National Broadcasting System

Basic Weather Indicators

Why Weather Information

## **Man Overboard 6**

Your Lifejacket

Your Personal Flotation Device

Cold Water Can Kill

Fishermen and Hunters

## **Loading and Operating Pleasure Craft 8**

Overloading Rowboats

Recommended Safe Load and Engine Power

Powered Boats

Ventilation of Gasoline-Powered Boats

Liquefied Petroleum Gases

## **Construction Standards for Small Vessels 11**

## **Licensing of Vessels 12**

## **Requirements for Pleasure Craft 12**

Under the Small Vessels Regulations

Racing Vessels

Fire Extinguishers

## **Signals 15**

Whistle Signals

Pyrotechnic Distress Signals

## **Reckless Operation 15**

## **Air Cushion Vehicles 16**

## **Diving 16**

## **Radar Reflectors 17**

## **Navigation Lights 17**

Small Vessels

Navigation Light Symbols

Navigation Lights (Great Lakes)

Navigation Lights (Waters Other Than Great Lakes)

## **Nautical Charts 24**

## **Steering and Sailing Rules 24**

## **The Canadian Aids to Navigation System 27**

## **Safety Hints 29**

**Effective January 1979**

©Minister of Supply and Services Canada 1979

Cat. No.: T31-31/1979

ISBN: 0-662-10248-7

Kromar Printing Ltd.

Contract No.: 03 KT-T-8113-8-0088

ISSN 0381 3533





# Standard Marine Distress Signals

## SEARCH AND RESCUE CANADIAN COAST GUARD

### RADIO

156.8 MHz (CH. 16 VHF) Call "MAYDAY MAYDAY MAYDAY"

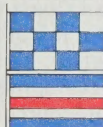
2182 kHz Call "MAY DAY MAY DAY MAY DAY"

500 kHz Call . . . . . (S.O.S.)

Indicate name and position of vessel

### CODE FLAGS

**N**  
over  
**C**



### BALL

over or under

Any type of ball shape



### SQUARE

Any type of flag or cloth



### Where to Call for Search and Rescue

#### EAST

R.C.C. — Halifax  
Phone 902-426-4730

S.A.R.E.C. — Newfoundland  
St. John's  
Phone 709-737-5151 Zenith 07021

#### CENTRAL

R.C.C. — Trenton  
Phone 613-392-2811  
Local 3879 or 3875

S.A.R.E.C. — Laurentian  
Quebec City  
Phone 418-694-3599

R.C.C. — Edmonton  
Phone 403-973-8402

#### WEST

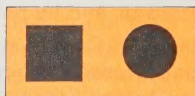
R.C.C. — Victoria  
Phone 604-388-1543

### DISTRESS CLOTH

Fluorescent orange cloth 183 cm x 114 cm  
(72" x 45")

Black 46 cm (18") ball & square 46 cm  
(18") apart

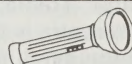
Spread on deck or cabin top  
to attract aircraft attention



### FLASHLIGHT

To signal S.O.S.

(3 short flashes — 3 long flashes — 3 short flashes)



### ARM SIGNAL

Slowly and repeatedly raise and lower the outstretched  
arms from the sides.



### FLARES

Parachute (red flare)

Hand (red flare)

Float (orange smoke flare)

Rockets (red stars)

Use when aircraft or vessel  
is approaching or in best  
position to see signals.

Keep one red flare for  
a second attempt.



### SOUND SIGNALS

Continuous sounding of fog horn,  
bell, whistle, etc.

Gun or any explosive at 1 minute intervals



# *search and rescue*

The Government of Canada's Search and Rescue (SAR) Program is a coordinated one, involving several government departments and agencies. The Department of National Defence has the primary responsibility, with Transport Canada playing a major role through the Canadian Coast Guard (CCG). Fisheries, the Royal Canadian Mounted Police, Indian Affairs and Northern Development, and Energy, Mines and Resources also provide assistance.

National Defence operates rescue aircraft while the Canadian Coast Guard operates rescue vessels and coordinates marine rescue volunteers. National Defence also maintains Rescue Coordination Centres in strategic locations manned by Defence and Coast Guard rescue experts. Other agencies assist with operations and additional search and rescue services are provided through provincial emergency programs, municipal and other local programs and by police forces.

Transport Canada maintains Coast Guard Rescue Officers at the Canadian Armed Forces SAR centres at Halifax, Trenton and Victoria. Each centre is the headquarters for a coordinated network of agencies trained to search for and rescue vessels in distress.

Booklets covering the marine rescue organization for each region may be obtained free of charge from:

Canadian Coast Guard,  
Newfoundland Region,  
P.O. Box 1300,  
St. John's, Nfld.  
A1C 5N5

Canadian Coast Guard,  
Maritime Region,  
P.O. Box 1013,  
Dartmouth, N.S.  
B2Y 3Z7

Canadian Coast Guard,  
Laurentian Region,  
101 Champlain Blvd.,  
Quebec, Quebec.  
G1K 4H9

Canadian Coast Guard,  
Centre Region,  
Toronto Star Building  
20th Floor,  
One Yonge St.,  
Toronto, Ontario  
M5E 1E5

Canadian Coast Guard,  
Western Region,  
Box 10060 Pacific Centre  
700 West Georgia St.,  
Vancouver, B.C.  
V7Y 1E1

## What You Can Do

Power boat and sailboat operators can assist in searches and help cut down on false alarms in the following ways:

- (a) Your boat or yacht club should appoint a daily or weekly safety officer to whom all arrivals and departures should be reported.
- (b) If you plan to go on a cruise, give your safety officer an itinerary with estimated times of departure and arrival at your destination.
- (c) If you do not belong to a yacht club, you should give a relative, neighbour or other responsible adult your itinerary and arrange to get in touch when you arrive at your destination. If you do not make contact by a certain time, the person concerned should consult one of the three DND search and rescue centres.
- (d) If you change your plans while under way, call your home club or the person who knows your plans and, possibly, the police. This will allay worry and prevent a needless alert which might set off a comprehensive air and marine search.
- (e) Carry the required charts and a serviceable compass in your boat at all times.
- (f) Always carry the international distress signal. This is a square flag, or an object resembling a square flag, with a ball or other circular object hoisted either above or below it. The flag and ball need not be of any particular colour, but the brighter they are the better.

In Canadian waters, the maritime safety radio service mainly uses medium frequency (MF) and very high frequency (VHF) radiotelephony. CCG radio stations located at various points on both coasts, on the Great Lakes and in the Arctic provide a safety service, which includes information broadcasts on weather and aids to navigation and facilities for handling messages or telephone conversations. Complete information on the radiotelephone services provided by the Coast Guard is given in *Radio Aids to Marine Navigation*. Separate volumes dealing with the Pacific area and with the Atlantic and Great Lakes area are published simultaneously four times a year, in March, June, September and December. The Atlantic and Great Lakes volume is also available in French. Annual subscriptions or single copies may be ordered from the Publishing Centre, Supply and Services Canada, Ottawa, Ontario, K1A 0S9, or from authorized bookstores.

You can make the best use of the two-way radiotelephone aboard your boat by applying the correct procedures for calling and answering other stations and passing messages or information. Such procedures and other pertinent information relating to licensing and operating of radiotelephone equipment are contained in the department's booklet, *Radiotelephone Operator Handbook Land / Sea / Air*, which can be purchased from the same sources as above.

## Caution

Mariners should note that the recommendations in this Guide apply only to Canadian waters. Mariners intending to proceed to United States waters should ask the nearest U.S. Coast Guard Base about any requirements related to their craft and intended voyage before leaving.



# weather information

Because rapid changes can occur in the weather, particularly over large bodies of water, small vessel operators and boating enthusiasts are warned that they should be aware of the importance of local weather information.

## Broadcasts

Information on weather is disseminated widely throughout Canada by the daily press and radio broadcasts on all normal listening channels. Pleasure boat operators whose craft are equipped with AM or FM radio receivers should acquaint themselves with the times at which weather information is broadcast in their area. Information on times and schedules, together with CBC weather broadcasts, are listed in the *Radio Aids to Marine Navigation*.

## National Broadcasting System

Marine forecasts for the East and West Coasts of Canada and the Great Lakes are scheduled for craft equipped with MF or VHF receivers or radiotelephones. A VHF service which produces a continuous transcribed broadcast of coded marine weather, dangers to navigation and inshore boating forecasts is in operation in the Great Lakes area. This service will be extended soon to the St. Lawrence River and to the East and West Coasts. A new service for local areas, Weatheradio Canada, is being instituted by Environment Canada. Please check with the Atmospheric Environment Service for further details.

## Basic Weather Indicators

- (a) Learn to read the sky for bad weather:
  - “Red sky at night, sailors delight. Red sky in the morning sailors take warning.”
  - High hazy cloud (cirrostratus), the kind which form a halo around the sun or moon, can bring bad storms within hours.
  - Fish-scale clouded skies (altocumulus) can bring rain the next day.
  - Rolling dark clouds (cumulonimbus) signify that bad weather can reach you in minutes.
  - A sudden change in cloud formations, shift of wind direction or drop in temperature is a sign of trouble.
- (b) Tune in a weather forecast; a small craft advisory is a warning to stay put. Unusual static from your radio can mean that an electrical storm is close.
- (c) Check your barometer; a falling needle can mean trouble.
- (d) The wind speed generally will increase and become gustier near land (especially if mountainous) or in a channel. The direction also is changeable. Special care must be exercised when wind changes near land, or in channels, are combined with tidal action.
- (e) Thunderstorm activity can markedly increase both the speed and gustiness of the wind and can cause rapidly-changing wind direction. Heavy rain and/or snow accompanying the thunderstorm can seriously restrict visibility. Thunderstorm clouds are identified by their huge, hard, cauliflower-like tops. As they become active, the tops become fuzzy and spread out to form an

anvil-like structure. From beneath they appear heavy, dark and massive. Lightning, of course, is a prime indicator. Thunderstorms should be avoided scrupulously.

Why Weather Information

Weather information for small vessel operators or boating enthusiasts is more than just the assurance of a fine day for their activities. Many do not realize the significance, for instance, of the wind upon the water. Rough water and its effect upon the handling characteristics and ultimate safety of a craft depends on many factors, including size, shape and load distribution. The consequent effect of wind and water upon each craft and the limitations of the craft in adverse weather conditions must be determined by the operator. The following table will serve as a rough guide to the effect of the wind upon exposed water only:

| Approx Wind Speed in Knots (km/hr) | Water Surface Description  | Probable Mean Wave Height in metres |
|------------------------------------|--|-------------------------------------|
| 2 ( 3)                             | Ripples  | —                                   |
| 5 ( 8)                             | Small, short wavelets. Crests do not break.  | .2                                  |
| 8 (13)                             | Large Wavelets. Crests break Foam.   | .6                                  |
| 13 (21)                            | Small waves. Frequent white caps.  | 1                                   |
| 18 (29)                            | Moderate waves of longer, more pronounced form. Many white caps. Possibly some spray.  | 2                                   |
| 24 (38)                            | Large waves. White foamy crests everywhere, Spray.   | 3                                   |
| 30 (48)                            | Water heaps up. Foam from breaking waves streaks along with the wind.  | 4                                   |
| 37 (59)                            | Moderately high waves. Edges of waves break into spindrift. Foam in streaks.   | 5.5                                 |
| 44 (70)                            | High waves. Foam streaks dense. Crests topple and roll over. Spray begins to reduce visibility.  | 7                                   |
| 50 (80)                            | Very high waves. Crests overhang. Foam blown in dense patches. Water surface becomes whitish. Water tumbles heavily. Visibility reduced. | 9                                   |

# man overboard

## Your Lifejacket

Lifejackets required by the Small Vessel Regulations must be of a type approved by Transport Canada. This means that a prototype has been tested to standards formulated by a committee under the auspices of the Canadian Government Specification Board and recognized by the department. The laboratory testing includes all the materials and component parts. The lifejacket itself is tested for performance capabilities by departmental officials.

This jacket is intended to help save your life if you become involved in an accident and find yourself in the water. The following points will assist you:

1. Try out the lifejacket. Put it on and familiarize yourself with the tie tape arrangements.
2. The jacket is reversible but, when using the keyhole style, it is important that the waist straps be tied around the body and not around the lifejacket. This allows the jacket to pivot away from the body and give the desired, inclined backward, floating position.
3. To familiarize yourself with the jacket's capabilities in the water, wade out into water about chest deep and, by bending your knees, let the buoyancy of the jacket support you. You will find that the lifejacket will incline you in a backward position with your mouth clear of the water.
4. If you have to swim while wearing a lifejacket, use a back or side stroke.
5. The responsibility for maintaining the jacket in good condition rests with you, and you should note the following:
  - (a) Do not abuse it by using it for any other purpose such as a seat cushion, boat fender or kneeling pad.

- (b) When it is dry, store it in a well ventilated, cool area.
- (c) When it is wet, hang it up to dry in the open air or a well ventilated area. Do not dry it in front of a radiator or other source of direct heat.
- (d) Do not use harsh detergents or cleaning fluids to clean dirty lifejackets. Never dry clean them.

Kapok lifejackets can be damaged by rough treatment. If the vinyl inserts containing the kapok are split or torn, water will come in contact with the kapok and the fibres can become waterlogged and matted and lose their buoyancy. If a jacket feels heavy and damp, discard it.

Lifejackets made from unicellular foam are more durable than the kapok-filled type, but rough treatment will break down the foam cells. Foam also tends to shrink with age or excessive exposure to heat or sunlight.

Children should be made to wear their lifejackets at all times when boating. They should be taught how to put them on and be allowed to try them out in the water. It is important that children feel comfortable in lifejackets, know what they are for and how they will keep them afloat.

Children do not float easily in a safe position because of the distribution of body weight and because they tend to panic if they suddenly find themselves in an environment to which they are not accustomed. Violent movement of their arms and legs in an attempt to "climb out" of the water tends to nullify the stability of the lifejacket. Approved lifejackets will keep them afloat but not always in a face-up position. Therefore, it is important to remember that a lifejacket is no substitute for adult supervision.



## Your Personal Flotation Device

Personal Flotation Devices (PFDs), required by the Small Vessel Regulations as one of the alternatives for certain small vessels, are approved by Transport Canada in a similar manner to approved lifejackets.

PFDs are designed to keep a conscious person afloat but have less buoyancy and turning ability than approved lifejackets. They are intended for constant wear and provide varying degrees of assistance in the water depending on body size and type. Although they will increase the chances of survival, they do not guarantee it.

Two types are approved by the department:

Type I has inherent buoyancy consisting of unicellular foam or macro-cellular elements.

Type II has two buoyancy mediums, inherent and inflatable. The inflatable section is fitted with an oral inflation device and a manual device consisting of a cylinder of compressed CO<sub>2</sub> operated by a manual trigger.

Your PFD can remain in good condition year after year if it is not abused through use as a cushion, fender or kneeling pad. When wet, it should be hung up to dry in a well ventilated area rather than dried in front of a radiator or other direct heat.

It should never be dry cleaned, and the manufacturer's instructions for a Type II PFD should be closely followed.

You should choose a PFD carefully. It should be suitable for your body type and size and for the kind of activity in which you intend to take part.

Finally, make sure the PFD you choose carries a label showing Transport Canada approval.

## Cold Water Can Kill

In cold water, the skin and outer tissues cool rapidly but it takes 10 to 15 minutes before the temperature of the heart and brain begin to cool.

This lowered deep body temperature is called hypothermia and is a common cause of death after immersion in cold water.

Predicted survival time is from 2½ to 3 hours in water at 10°C. Survival time is increased by extra body fat and decreased by small body size.

Children cool much faster than adults due to their smaller size. Here are several hints for survival in cold water when wearing a lifejacket:

1. Swimming does not help you keep warm. Results of practical tests show that the average person cools faster when swimming than when staying still.
2. Certain regions of the body lose heat rapidly while a person is not moving in cold water. These are the head (which is normally out of the water), the sides of the chest (where there is little muscle or fat) and the groin.
3. You can try to reduce heat loss from these critical body regions by:
  - (a) assuming a fetal position or holding the arms tight against the side of the chest and raising the thighs;
  - (b) huddling together, when two or more persons are in the water.

Alcohol does not help survival and should never be given to a person suffering from hypothermia. Body heat may be restored through administering direct heat and wrapping the survivor in blankets.

# loading and operating

## Fishermen and Hunters

Here are some special tips for you:

- (a) Do not wear high boots, particularly open top rubber boots, in open boats. Carry a second pair of ankle boots for wearing in the boat.
- (b) Do not stand up in a small boat when hunting or fishing.
- (c) Be particularly careful that you do not overload your boat with your extra clothing and equipment.
- (d) Do not attempt to take a small boat out onto water where, if the weather deteriorates, you are unable to reach safety quickly.
- (e) Canoes should not be used for fishing or hunting unless you are an experienced canoeist. These crafts can be dangerous in the hands of the inexperienced.
- (f) In the fall and the spring, water temperatures are low and your chances of survival, if you fall overboard, are reduced considerably.


## Overloading Rowboats

Overloading is dangerous. Because there are so many types of small boats, specific advice cannot be given for all contingencies. The number of persons that can be carried safely depends on such factors as the type of boat, distribution of passengers and equipment to be carried.

As a rough guide only, Transport Canada issues the following notice for posting at holiday resorts, boat hiring stations and camp sites:

| Length<br>of<br>Boat | Number<br>of<br>Persons | Max.<br>Weight<br>Load |
|----------------------|-------------------------|------------------------|
| 3 m                  | 2                       | 185 kg                 |
| 3.7 m                | 3                       | 260 kg                 |
| 4 m                  | 4                       | 335 kg                 |
| 5 m                  | 5                       | 440 kg                 |

For rough water conditions, one person less in the boat would be advisable before starting out. However, common sense should dictate whether the boat should put out at all in bad weather. This applies particularly to boats less than three metres long, which may be suitable for operation in calm water only.

|  |    |   |
|--|----|---|
|  <b>Transport Canada</b> <b>Transports Canada</b> |    |   |
| RECOMMENDED MAXIMUMS<br>FOR NORMAL OPERATION   |    | MAXIMUMS RECOMMANDÉS<br>POUR OPÉRATION NORMALE          |
| No. — NO   | kW | BUILDER — CONSTRUCTEUR                                  |
| Maximum Load<br>Charge max.  |    | kg      Model<br>Modèle                                 |
| ADVERSE CONDITIONS<br>REDUCE<br>CAPACITY   |    | LES CONDITIONS DÉFAVORABLES<br>REDUISENT LA<br>CAPACITÉ |

Applications for these plates can be obtained from any Customs or Ship Safety office or from Coast Guard headquarters in Ottawa. Fill in all particulars, ensuring that precise measurements are entered in all the spaces provided. Mail the completed form in the envelope provided, enclosing a cheque or money order in the amount of \$1 made payable to the Receiver General of Canada.



# pleasure craft

## Recommended Safe Load and Engine Power

The above table may be used as a guide for loading rowboats, but does not apply when a motor is attached to a boat.

An inexperienced person must be particularly careful when attaching an outboard motor to a boat and, when starting the motor, should ensure that it is set in neutral and in the straight-ahead position. A motor started in gear when it is turned may cause the boat to turn suddenly and capsize.

The law requires every pleasure boat five metres long or under, powered with an outboard motor or motors totalling 7.5 kilowatts (10 horsepower) or more, to carry a plate issued by Transport Canada stating the recommended maximum load and engine power. This requirement should not be confused with the licensing of vessels which is dealt with on page 12.

The engine power capacities recommended by Transport Canada are based on tests of a large number of outboard motor boats on standard evaluation courses. Canadian boat manufacturers and importers participate in these tests, which are held frequently for assessing the performance of the latest boat designs and comparing them against the recommended capacities.

The efficiency of motor wells and motor and steering controls forward of amidships is reflected in the engine power ratings.

A \$1 fee is charged for a capacity plate, an example of which is shown at left.

## Powered Boats

Inboard gasoline engines must have a drip pan covered with wire gauze fitted under the carburetor, as well as suitable means of preventing gasoline from leaking into the bilges. In addition, if the engines are installed below deck or enclosed in any way, backfire flame arrestors must be fitted.

The following precautions are necessary when fuelling:

1. Moor the boat securely.
2. Don't smoke.
3. Take portable tanks ashore.
4. Close hatches and doors.
5. Don't use electrical switches.
6. Extinguish open flames.
7. Send passengers ashore.
8. Hold nozzle firmly against filling pipe.
9. Don't overfill.
10. Wipe up any spillage.
11. Open up and ventilate.
12. Test. Use your nose.
13. Operate bilge blower before starting engines.
14. Start engines.
15. Let passengers re-embark.

## Ventilation of Gasoline-Powered Boats

The *Small Vessel Regulations* require any enclosed space in which an inboard gasoline engine is installed to be ventilated efficiently by suitable ventilators and an exhaust fan. Although this regulation applies only to inboard engines, it is nevertheless recommended that all enclosed spaces in both inboard and outboard powered boats be well ventilated if they contain fuel tanks or other sources of gasoline.

An explosion and fire can occur when an enclosed space containing an accumulation of gasoline vapours 9

is inadequately ventilated. Accidental explosions usually occur when the engine is started, and can produce disastrous results.

Efficient ventilation is achieved by fitting at least two ventilation ducts in each space containing engines or fuel tanks, one for exhaust and one for supply. An exhaust duct should lead from the bilges under the engines or fuel tanks to the surface and a supply duct should extend from the surface to a level below that of the carburetor intake. Supply and exhaust ducts should be as far apart as possible and arranged to give efficient ventilation of the space, with the supply cowls at least 10 cm higher than the exhaust outlets. Depending on the size and arrangement of your boat, the two ducts mentioned above may not be sufficient and additional ventilation should be fitted as necessary. Care should be taken to ensure that no pockets of gas accumulate in boats with deep V bottoms due to lack of proper ventilation.

Each duct opening should be the same size and the minimum area of a duct opening should be equivalent to 21 square centimetres per metre of beam. The exterior ends of the ducts should have obstructed cowls or equivalent fittings with openings at least equal in area to the ducts.

Exhaust ducts may be fitted with wind-actuated self trimming or rotary exhauster heads or with power-operated exhaust fans. If a power-operated fan is fitted, the electric motor and the switch for operating the motor should be installed outside the ventilation duct and, preferably, outside the machinery space. If this is impracticable, the motor and/or an explosion-proof switch may be installed within the machinery space. An exhaust fan should be run for about five minutes before starting the engine.

## Liquefied Petroleum Gases

Liquefied petroleum gases such as propane and butane are coming into greater use on pleasure craft. These gases can create an even more hazardous condition on board ship than gasoline and, for this reason, their use on passenger-carrying ships is forbidden by law. Propane and butane are heavier than air and will, therefore, flow rapidly into the lower parts of the boat. They are then extremely difficult to remove.

If such equipment is installed on your boat, be sure that the installation meets the standards of a governmental or equally impartial authority. For this purpose, you will find the *Liquefied Petroleum Gas Regulations* useful. These regulations apply to boats other than pleasure craft, but the requirements are as sound for pleasure craft as for work boats. They are available from Publishing Centre, Supply & Services Canada, Ottawa, Ontario, K1A 0S9, or from authorized bookstores.

**WARNING:** When using gas-burning appliances with a pilot light, be sure to provide adequate ventilation and ensure that no inflammable substances are placed near the naked flame. It is recommended, and is mandatory on inspected ships, that such an appliance be fitted with a device which automatically shuts off the gas in the main supply line when the pilot light goes out.



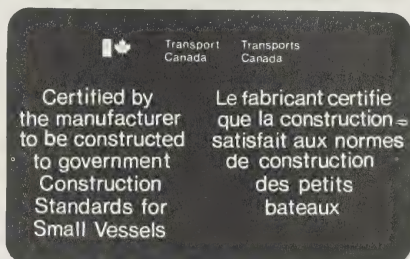
# construction standards for small vessels

The Transport Canada Construction Standards for Small Vessels have been developed in order to provide the purchaser with a boat manufactured to current construction techniques for safety. The *Small Vessel Regulations* require that certain classes of small vessels be constructed in accordance with these Standards which cover minimum requirements for hull construction, flotation, ventilation of explosive fumes, fuel and electrical systems. Basically, the Standards apply to:

- a) power driven pleasure craft not over six metres long which have no enclosed cabin for sleeping accommodation;
- b) all pleasure craft, regardless of length or accommodation, which have gasoline engines for propulsion or electrical generating power.

A manufacturer or importer of boats subject to the Standards is required to declare by affidavit to Transport Canada that the boats are in compliance. A decal issued by the department must be affixed to each boat.

It is recommended that, before buying a boat to which the Standards apply, prospective purchasers ensure that the decal illustrated below is prominently displayed.



# licensing of vessels

Every vessel less than 15 registered tons or, in the case of a pleasure craft, not exceeding 20 registered tons, equipped with a motor or motors of 7.5 kilowatt (10 horsepower) or more, must be licensed. Licences are provided free on request from the nearest Custom House. Before the boat is operated, the licence number issued must be marked in block characters, not less than 7.7 centimetres high and in a colour which contrasts with the background, on each side of the bow of the vessel or on a board permanently attached to the vessel as close to the bow as practicable, so that the number is clearly visible from each side.

# requirements for pleas

## Under The Small Vessel Regulations

These requirements apply to all pleasure craft, powered or not, including sailing vessels, canoes, kayaks and rowboats, but not racing shells or racing canoes used in or being prepared for competition.

NOTE: "Approved" means approved by Transport Canada. The Standard Lifejacket (keyhole type) approved by the Board of Steamship Inspection, may be substituted for any approved small vessel lifejacket or approved personal flotation device (PFD) required by the *Small Vessel Regulations*.

Vessel not over 5.5 metres long:

1. One approved small vessel lifejacket, or approved PFD or life-saving cushion, for each person on board.
2. Two oars and rowlocks or two paddles.
3. One bailer or one manual pump.
4. One Class BI fire extinguisher, if the vessel is equipped with an inboard motor, permanently-fixed or built-in fuel tanks or a cooking or heating appliance which burns liquid or gaseous fuel.
5. Navigation lights, if permanently fitted, must comply with the requirements of the *Collision Regulations*.

Vessel over 5.5 metres but not over 8 metres long:

1. One approved small vessel lifejacket, or approved PFD, for each person on board.
2. Two oars and rowlocks, two paddles or one anchor with not less than 15.25 metres of cable, rope or chain.
3. One bailer or one manual pump.
4. One Class BI fire extinguisher, if the vessel is power driven or equipped with a cooking or heat-



ing appliance which burns liquid or gaseous fuel.

5. One throwing device, which may be either
  - (a) an approved lifesaving cushion, or
  - (b) a buoyant heaving line, or
  - (c) an approved lifebuoy, 508, 610 or 762 millimetres in diameter.
6. Six approved pyrotechnic distress signals, of a type other than day-light smoke signals, except on a vessel engaged in or preparing for racing competition and with no sleeping accommodation.
7. Navigation lights, if permanently fitted, must comply with the requirements of the *Collision Regulations*.

Vessel over 8 metres but not over 12 metres long:

1. One approved small vessel life-jacket for each person on board.

NOTE: Sailing vessels which have no enclosed cabin with sleeping facilities may carry, in lieu of the approved small vessel lifejacket, one approved PFD for each person on board.

2. One approved lifebuoy, 762 or 610 millimetres in diameter.
3. One buoyant heaving line at least 15.25 m long.
4. One bailer and one manual bilge pump.
5. Six pyrotechnic distress signals of any type and six pyrotechnic distress signals of Type A, B or C.
6. One anchor with at least 15.25 metres of cable, rope or chain.
7. One Class BI fire extinguisher, if the vessel is power driven or is equipped with a cooking or heating appliance which burns liquid or gaseous fuel.
8. Navigation lights and sound sig-

nalling apparatus which permit the vessel to comply with the *Collision Regulations*.

Vessel over 12 metres but not over 20 metres long:

1. One approved Standard Life-jacket or one approved small vessel lifejacket for each person on board.
2. One approved lifebuoy, 762 millimetres in diameter or two approved lifebuoys, 610 millimetres in diameter.
3. One buoyant heaving line at least 15.25 metres long.
4. Six pyrotechnic distress signals of any type and six pyrotechnic distress signals of Type A, B, or C.
5. One anchor with at least 15.25 metres of cable rope or chain.
6. Two fire buckets or other suitable means of providing water to any part of the vessel to extinguish a fire effectively.
7. (a) A manual or power-driven pump outside the machinery space, with one fire hose and nozzle which can direct a jet of water into any part of the vessel;  
(b) Two Class BII fire extinguishers, one of which is located next to the accommodation space entrance and the other next to the machinery space entrance.
8. Efficient bilge pumping arrangements.
9. One Class BII fire extinguisher, if the vessel is power-driven or is equipped with a cooking or heating appliance which burns liquid or gaseous fuel.
10. One fire axe.
11. Navigation lights and sound signalling apparatus which permit the vessel to comply with the *Collision Regulations*.

Vessel over 20 metres long:

1. One approved Standard Life-jacket or one approved small vessel lifejacket for each person on board.
2. Two approved lifebuoys, 762 millimetres in diameter, one of which has a self-igniting light attached.
3. One buoyant heaving line at least 27.5 metres long.
4. Six pyrotechnic distress signals of any type, plus six pyrotechnic distress signals of Type A, B, or C.
5. One anchor with at least 15.25 metres of cable rope or chain.
6. Four fire buckets.
7. Two fire axes.
8. One power-driven pump located outside the machinery space with one fire hose and nozzle which can direct a jet of water into any part of the vessel.

## Fire Extinguishers

Fire extinguishers required by the *Small Vessel Regulations* shall be of a type approved by:

9. Efficient bilge pumping arrangements.
10. One Class AII fire extinguisher in each accommodation space (but no more than three such extinguishers need be carried).
11. Two Class BII fire extinguishers in the machinery space, one of which is located near the entrance.
12. Navigation lights and sound signalling apparatus which permit the vessel to comply with the *Collision Regulations*.

## Racing Vessels

Racing vessels, when racing or preparing for racing and operated when visibility is clear, may carry, in lieu of the equipment listed elsewhere in this section:

1. One approved racing type life-jacket, to be worn by the operator at all times;
2. One Class BI fire extinguisher, if fitted with an inboard motor.

1. Underwriters Laboratories, Inc.,
2. Underwriters Laboratories of Canada,
3. The British Board of Trade, for marine use.

## Equivalent Fire Extinguishers

| Class | Soda Acid and Water | Foam   | Carbon Dioxide Gas | Dry Chemical |
|-------|---------------------|--------|--------------------|--------------|
|       | Litres              | Litres | kg                 | kg           |
| AI    | 4.5                 | 4.5    |                    |              |
| AII   | 9                   | 9      |                    |              |
| BI    | —                   | 4.5    | 2.25               | 0.9          |
| BII   | —                   | 9      | 4.5                | 2.25         |

The designators, such as Class AI, are used for regulatory purposes and may not appear on the extinguisher

minimum and all dry chemical extinguishers listed with an ABC rating by any of the authorities above are suitable for Class A, B or C fires.



# signals

## Whistle Signals

Great Lakes (in all weathers):

- (a) One blast means "I am altering course to starboard" (right).
- (b) Two blasts mean "I am altering course to port" (left).

NOTE: Every power-driven vessel receiving such a signal from another shall promptly respond with the same signal or sound the danger signal, which is five or more blasts meaning: "Emergency or danger signal" or "Signal not understood."

### EXCEPTION:

A vessel eight metres long, or less, is not required to sound the manoeuvring signal but, if she does not do so, she must be manoeuvred in a manner which will prevent risk of collision with or misunderstanding by any other vessel.

Waters other than the Great Lakes (vessels in sight of one another):

- (a) One blast means "I am altering course to starboard."
- (b) Two blast means "I am altering course to port."
- (c) Three blasts mean "I am operating astern propulsion."
- (d) Five or more blasts mean "Emergency or danger signal" or "Signal not understood."

## Pyrotechnic Distress Signals

An approved pyrotechnic distress signal (flare) is water-proofed by the manufacturer and packed in a water-proof container. Instructions or diagrams showing the method of operation are marked on the signal, as are the lot number and date of manufacture. If four years or more have elapsed since the date of manufacture, the distress signal is considered to no longer meet the equipment requirements and should be replaced.

TYPE A - parachute rocket flare, single red flare

TYPE B - multi-star (2 or more) rocket, free-fall red stars

TYPE C - hand-held red flare

TYPE D - a buoyant or hand-held orange smoke flare, which is considered suitable as a daylight distress signal.

## reckless operation

In general, power-driven vessels must keep out of the way of sailboats, rowboats and canoes, but every operator must keep a proper lookout and take every precaution required by the ordinary practice of seamen or by the circumstances of each case.

Anyone operating a boat, air cushion vehicle, water skis, surf board or any towed object in a manner dangerous to navigation, life or limb, is guilty of an indictable offence and liable to imprisonment or punishment on summary conviction.

The Criminal Code of Canada provides ample authority to deal with this offence, which includes:

- (a) operating a vessel when impaired;
- (b) towing a person on water skis after dark or without another person keeping watch;
- (c) failing to stop at the scene of an accident.

Charges can be laid against a reckless operator by "laying an information," a procedure which requires making a sworn statement before a Magistrate or Justice of the Peace.

## air cushion vehicles diving

As air cushion vehicles (ACVs) are used increasingly as passenger-carrying ferries, small boat operators should be aware that ACVs do not manoeuvre in the same way as conventional boats and should exercise caution in their vicinity.

ACVs are subject to the *Rules of the Road for the Great Lakes* and the *Regulations for Preventing Collisions at Sea* but, as stated above, their manoeuvring characteristics differ and operators of small craft should be aware that an ACV's heading is not necessarily a true indication of its course. It should also be borne in mind that some ACVs have a high noise level which may prevent both the ACV operator and operators of other boats from hearing sound signals.

**Always be alert in the vicinity of an ACV.**

For a number of years, several organizations engaged in diving and underwater operations in Canadian waters have used the distinctive signal below to indicate these activities.

This signal is not a substitute for the International Code of Signals single-flag signal "A", indicating "I have a diver down; keep well clear at slow speed." However, it is in general use and liable to be encountered anywhere in navigable waters, particularly those areas most frequented by small vessels.

The signal is a square red flag with a white diagonal stripe extending from the head of the hoist to the bottom of the fly. It may be exhibited from a vessel, marine plant or floating marker. The signal indicates only that underwater operations are taking place and does not confer any special rights or privileges on the exhibitor.

Mariners and others concerned are advised to exercise particular vigilance and care when navigating in waters where the signal is exhibited.



## radar reflectors

Every pleasure craft less than 20 m long or constructed primarily of materials other than metal must have a passive radar reflector which:

- (a) provides a response in the three cm marine radar band equivalent to an effective reflecting area of not less than 10 square metres through 360 degrees in azimuth;
- (b) is located above all superstructures, if practicable, at least four metres above the water, and is in a position where and painted so as not to be visually prominent;
- (c) can continue to reflect under any conditions likely to be experienced;
- (d) is clearly marked to indicate any preferred orientation of mounting.

**NOTE:** The above requirements need not be met if they are not essential for the safety of the pleasure craft or are impracticable.

## navigation lights

Navigation lights for small vessels are described in detail in:

- (a) *The Rules of the Road for the Great Lakes* and in Part VI of the *Small Vessel Regulations*. The Rules apply on Lakes Ontario, Erie, Huron (including Georgian Bay), Michigan and Superior, on their connecting and tributary waters, and on the Ottawa and St. Lawrence Rivers and their tributaries as far east as but not including the Port of Montreal;
- (b) The revised *Collision Regulations*. These apply in all other waters and include the *International Regulations for Preventing Collisions at Sea* and special provisions for Canadian waters.

Copies of these regulations can be purchased from the Publishing Centre, Supply & Services Canada, Ottawa, Ontario, K1A 0S9, or from authorized bookstores.

### Small Vessels







For the purposes of this Guide small vessels include:

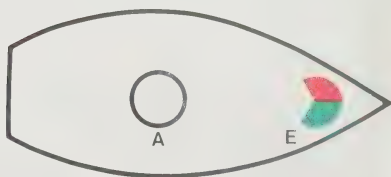
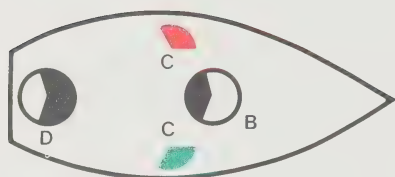
- (a) motorboats not more than 20 metres long measured from end to end over the deck but excluding the sheer;
- (b) sailboats not more than 20 metres long;
- (c) open boats and vessels under oars;
- (d) canoes.

The regulations require small vessels to exhibit the appropriate navigation lights between sunset and sunrise.



## Navigation Light Symbols

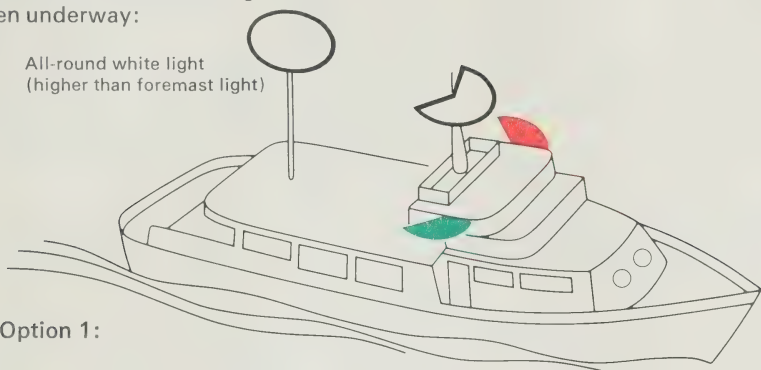
| Symbol  | Arc<br>(degrees) | Arc<br>(Points) | Function   | on diagram |
|---|------------------|-----------------|--|------------|
|  | 360              | 32              | (a) All-round masthead light<br>(b) All-round anchor light | A          |
|  | 225              | 20              | masthead light   | B          |
|   | 112½             | 10              | side lights  | C          |
|  | 135              | 12              | stern light  | D          |
|  | —                | —               | combined lantern<br>(a) red and green; or                  | E          |
|  | —                | —               | (b) red, green and white.                                  | F          |



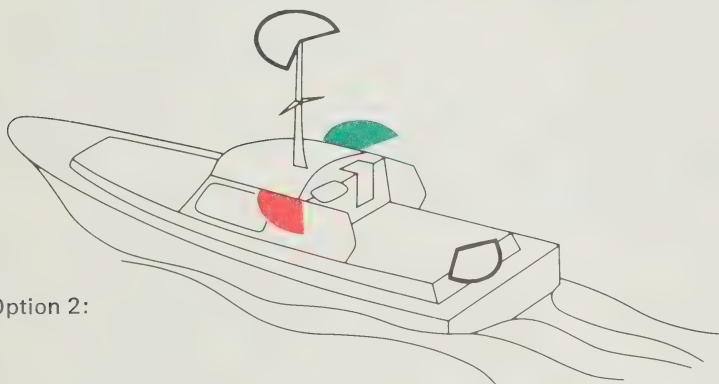
## Navigation Lights (Great Lakes)

1. Motor boats over eight metres but not over 20 metres long, when underway:

All-round white light  
(higher than foremast light)

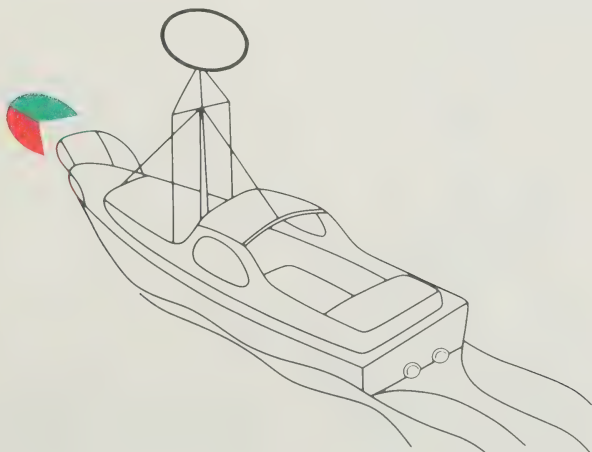


Option 1:



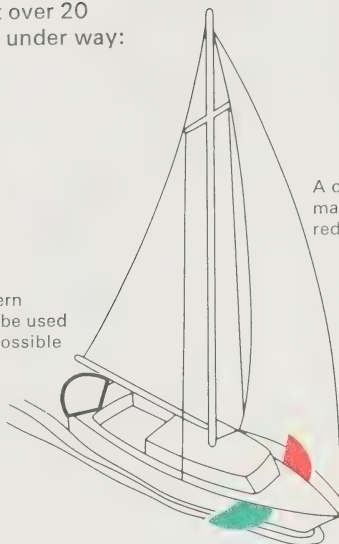
Option 2:

2. Motor boats not over eight metres long, when under way:



3. Sailing vessels not over 20 metres long, when under way:

A flashlight or lighted lantern showing a white light may be used in bad weather if it is not possible to fix a stern light.



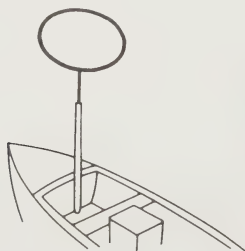
A combined red and green lantern may be substituted for the separate red and green side lights.

4. Rowing boats and canoes:

Exhibit a white light in the direction of any approaching vessel in sufficient time to prevent a collision.



5. Vessels not over 20 metres long, when anchored, exhibit:



6. Use of searchlights:

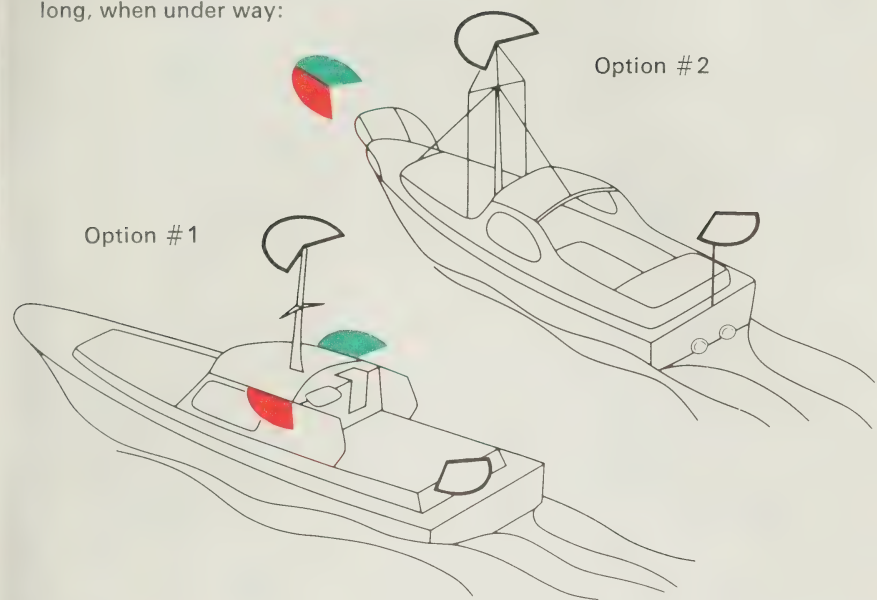
No person shall direct the rays of a searchlight or other blinding light on a vessel under way in a

manner which may interfere with the vision of the person navigating or steering the other vessel.

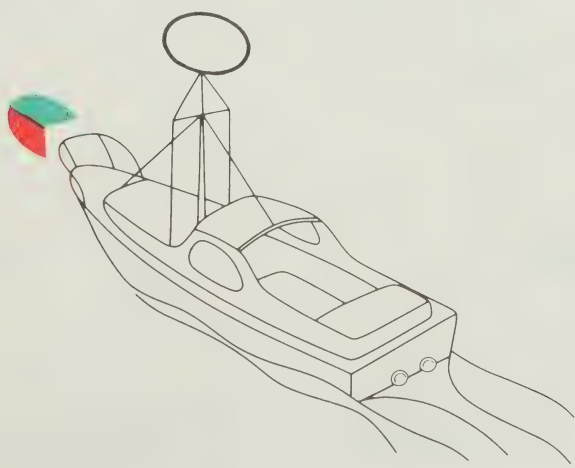


**Navigation Lights (waters other than the Great Lakes)**

- 1. Motor boats less than 20 metres long, when under way:



The International Regulations are modified by a Canadian "Special Provision": In Canadian roadsteads, harbours, rivers, lakes and inland waters, a motorboat less than seven metres long has a third option:

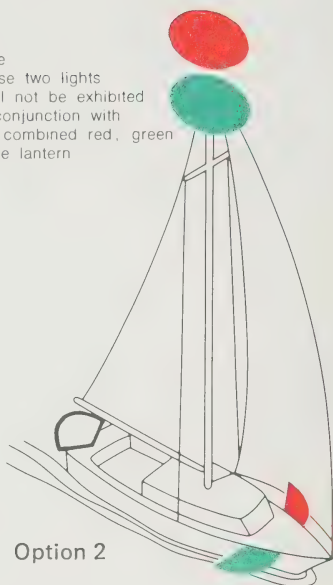


2. Sailing vessels not over 20 metres long, when under way:



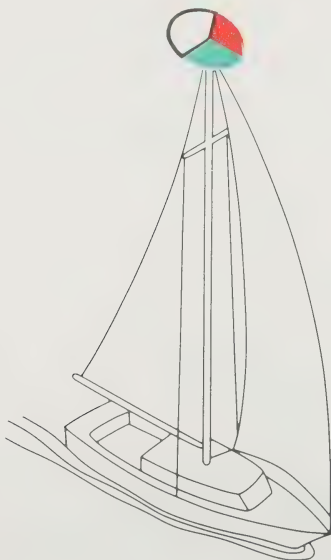
Option 1

Note  
These two lights  
shall not be exhibited  
in conjunction with  
the combined red, green  
white lantern

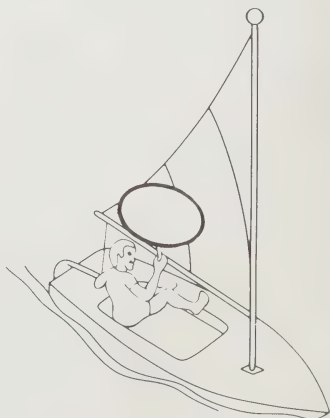


Option 2

Sailing vessels less than 12 metres long have a third option — a combined red, green and white lantern (sidelights and sternlight):



Sailing vessels less than seven metres long, when under way, have a fourth option:



NOTE:

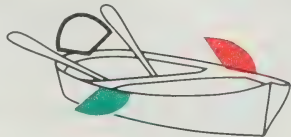
The flashlight or lighted lantern showing a white light is exhibited in time to prevent a collision.

3. A vessel under oars, when under way, exhibits:



Option #1

NOTE:  
The flashlight or lighted lantern showing a white light is exhibited in time to prevent a collision.

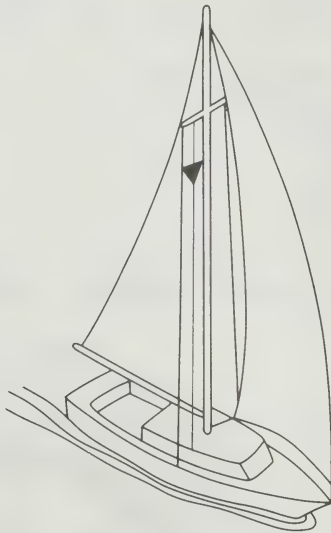


Option #2

4. Sailing vessels proceeding under sail and also being propelled by machinery exhibit a cone shape (apex downward), by day:

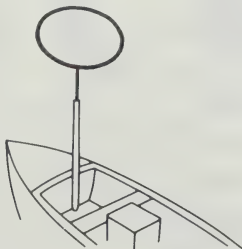


NOTE:  
At night, exhibit the lights required by a power-driven vessel of similar length.



5. Vessels not over 20 metres long, when anchored:

At night



By day



NOTE:  
A vessel less than seven metres long is not required to exhibit these anchor lights or shapes.



# nautical charts

The *Charts and Publications Regulations* require every type of vessel used in navigation and not propelled by oars to have on board, maintain and use appropriate charts, tide tables, list of lights and other nautical publications.

Catalogues listing charts, related publications, prices and authorized dealers located throughout Canada and abroad are available from:

Hydrographic Chart Distribution Office,  
Department of Fisheries and the Environment,  
1675 Russell Road,  
P.O. Box 8080,  
Ottawa, Ontario, CANADA  
K1G 3H6

| Quality of the Bottom |                                |   |                         |
|-----------------------|--------------------------------|---|-------------------------|
| 1                     | Ground<br>Fond                 | 4 | Oz Ooze<br>Boue ; Fange |
| 2                     | S Sand<br>Sable                | 5 | Marl<br>Marne           |
| 3                     | M Mud ; Muddy<br>Vase ; Vaseux | 6 | Cy Clay<br>Argile       |

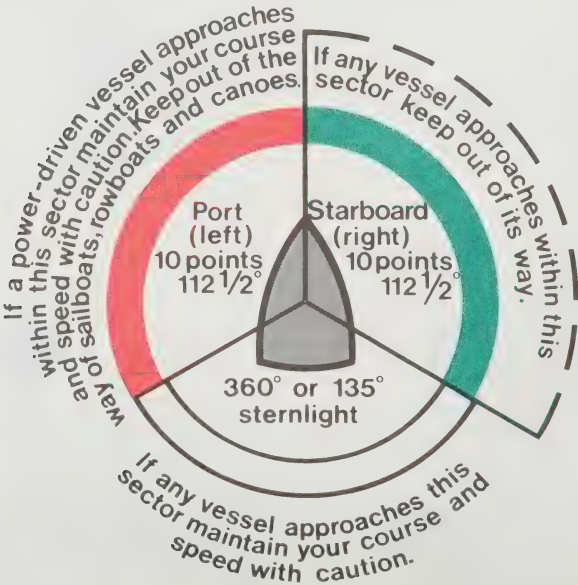
Some of the symbols and abbreviations shown in Chart No. 1 and used in nautical charts published by the Canadian Hydrographic Service are shown below:

| Buoys and Beacons |  |
|-------------------|--|
| 1                 | Position of buoy or beacon (floating)<br>Emplacement d'une bouée ou balise (flottante) |
| 2                 | Light buoy<br>Bouée lumineuse  |
| 3                 | Bell buoy<br>Bouée à cloche  |

| Dangers |   |
|---------|---|
| 1       | Rock which does not cover (with height)<br>(see general remarks)<br>Roche ne couvrant jamais (avec hauteur)<br>(voir observations générales)          |
| 2       | Rock which covers and uncovers (with height)<br>(see general remarks)<br>Roche couvrant et découvrant (avec hauteur)<br>(voir observations générales) |

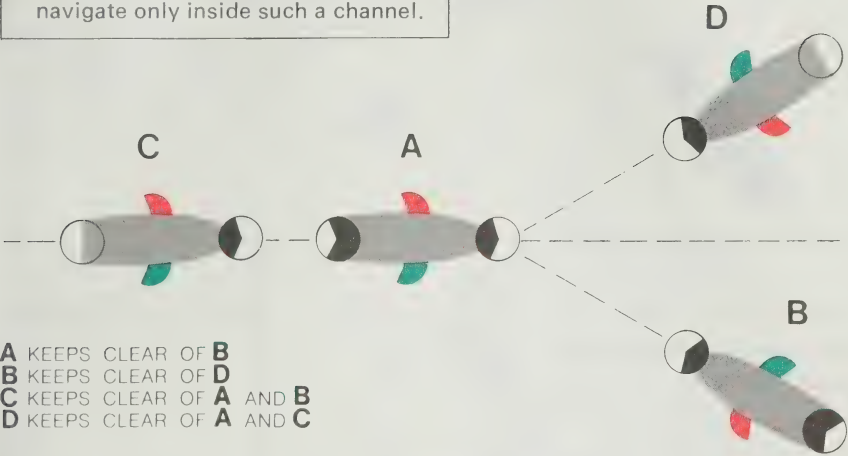
# steering and sailing rules



Great Lakes Regulations and  
Collision Regulations

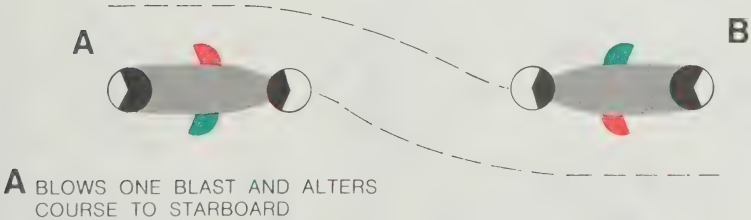
Warning

In a narrow channel, a power-driven vessel less than 20 metres long or a sailing vessel must not hamper the safe passage of a vessel which can navigate only inside such a channel.

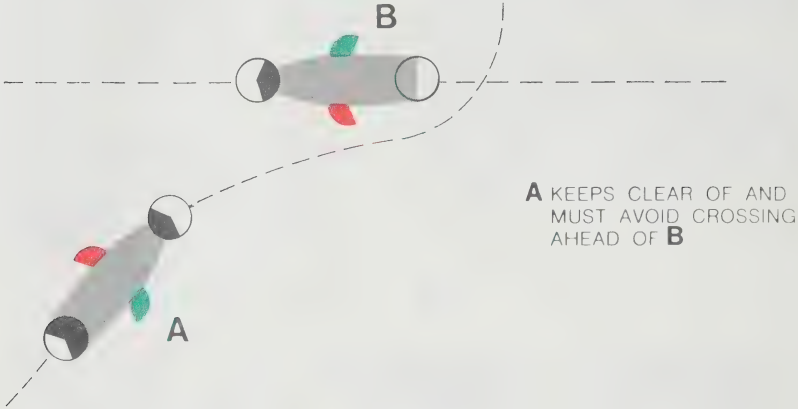


Two power-driven vessels meeting  
“head on”: each alters course to star-  
board.

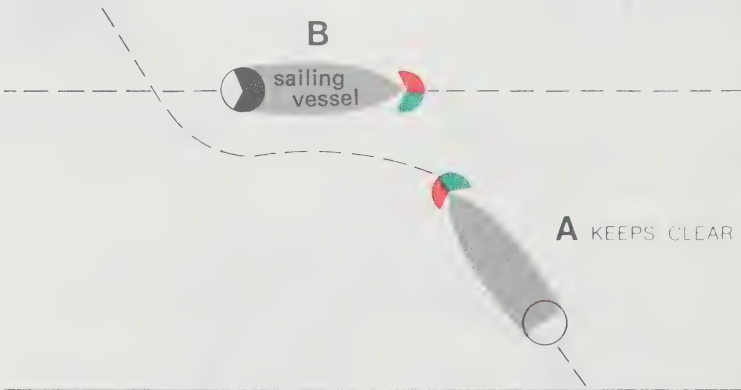
B BLOWS ONE BLAST AND  
ALTERS COURSE TO STARBOARD



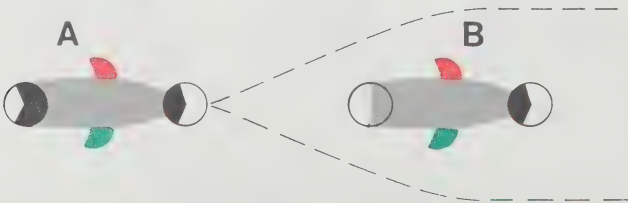
Two power-driven vessels crossing:  
the vessel which has the other on her  
own starboard side keeps clear.



A power-driven vessel keeps clear of  
a sailing vessel.

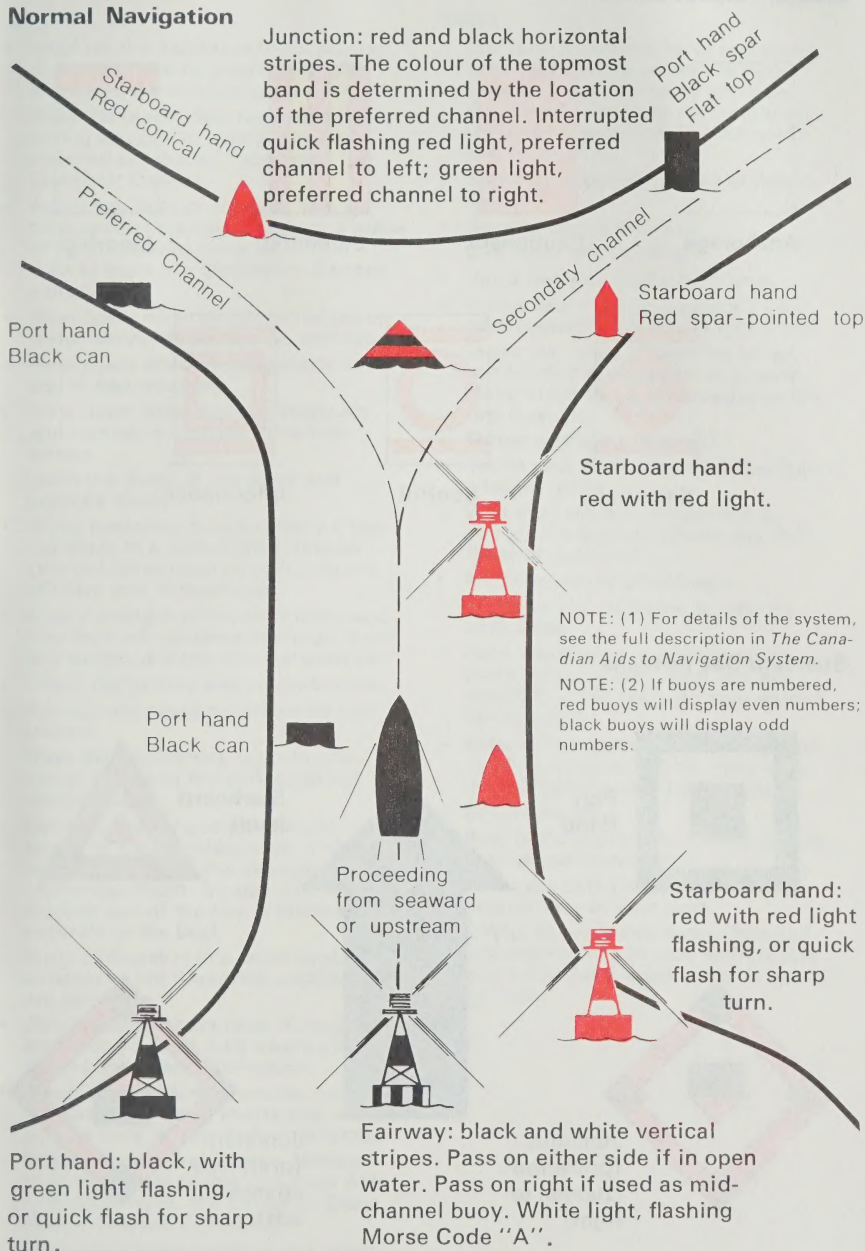


Any vessel overtaking another must  
keep clear.



# the canadian aids to navigation system

## Normal Navigation

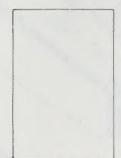


Aids to Navigation must be used in conjunction with available marine publications, including charts, light

lists and sailing directions, in order to understand and interpret their function properly.



## Special Purpose Buoys



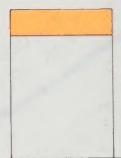
Anchorage



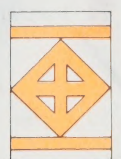
Cautionary



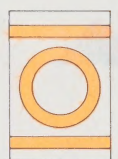
Scientific



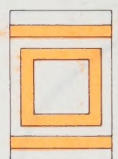
Mooring



Keep-out

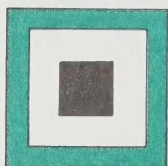


Control

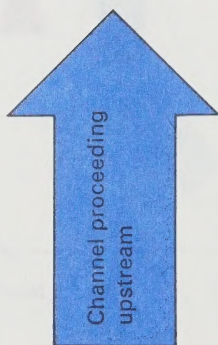


Information

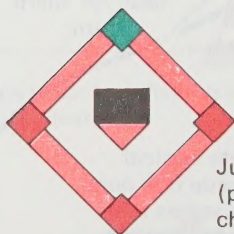
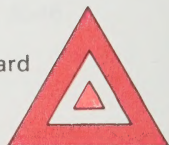
## Standard Day Beacons



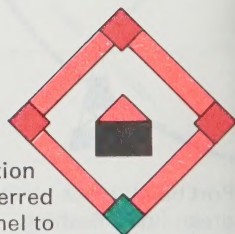
Port  
Hand



Starboard  
hand



Junction  
(preferred  
channel to  
right)



Junction  
(preferred  
channel to  
left)

For more detailed information, consult *The Canadian Aids to Navigation System* which is available free from Transport Canada, Place de Ville, Ottawa, Ontario K1A 0N5.

# safety hints

## Do

- Head for the nearest safe anchorage or landing when a storm threatens and avoid the temptation to buck it.
- Obey the regulations regarding life-saving equipment, using only that stamped or labelled "approved" by Transport Canada.
- Assist any boat in distress. The vertical circular waving motion of a piece of light-coloured material or of a light at night is a distinctive distress signal.
- Slow down when passing dredges or water where divers may be working.
- Slow down when making sharp turns and in bad weather.
- Slow down when passing rowboats and canoes, especially in narrow waters.
- Learn the *Rules of the Road* and practice them.
- When operating at night, carry a few red flares in a watertight container (the red flares used on railroads are efficient and inexpensive).
- Keep the bilges of the boat clean and free from oil, gasoline and rags. Vent any enclosed areas into the open air.
- Check the battery and its ventilation.
- Respect your boat and know its limitations.
- Obey the regulations regarding fire precautions and fire extinguishing equipment.
- Carry an anchor and a sufficient length of sound cable, rope or chain — at least five times the average anchorage depth. Be sure that the inboard end of the line is fastened securely to the boat.
- Wear a lifejacket in a small boat, whether or not lifesaving cushions are carried.
- Join a yacht or boat club, if possible, and keep yourself fully aware of regulations and other information.
- When on an extended cruise, carry the latest corrected charts and related publications in your boat at all times.
- Obtain Annual and Weekly Notices to Mariners (available free from Aids and Waterways, the Canadian Coast Guard, Ottawa, K1A 0N7).
- Keep some spare clothing in a watertight plastic bag, plus a flashlight, whistle, knife, first aid kit and emergency rations.

## Don't

- Stand up or change seats in a small boat, particularly when it is fully loaded. If it's necessary to move, crouch low and keep the weight on the boat's centreline, holding on to both gunwales.
- Stand up when starting an outboard motor.
- Operate near swimmers.
- Mix liquor and boating.
- Use a leaky or poorly-built boat.
- Cruise fast enough to create a dangerous swell when near small boats.
- Leave your tiller or steering wheel unattended when under way, especially in harbours, anchorages or narrow channels.
- Throw garbage overboard.
- Sound your horn or use the spotlight unnecessarily.
- Wait until the last minute to signify your intentions of obeying the *Rules of the Road*.
- Anchor close to other boats.
- Cruise at high speed in or near an anchorage.
- Hold impromptu races with other boats, because row boats, canoes and other small craft are endangered by the wash.
- Attempt to swim ashore if your boat capsizes or is swamped; hang on to the boat until you are picked up.
- Be a show-off.
- Buzz bathing beaches; swimmers are hard to see in the water.
- Carry out-dated charts and related publications in your boat.
- Create an excessive wake. This can endanger others in your vicinity and also cause bank erosion and property damage.

